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REMARKS

This response is offered in reply to the office action of July 31, 2007. A petition and fee for a three month time extension are enclosed.

In paragraph 1 of the office action, the previous restriction is made final such that claims 47-55 and 79-87 are withdrawn. Applicant affirms the withdrawal of claims 47-55 and 79-87 and has indicated above that claims 47-55 and 79-87 are withdrawn.

In paragraph 7 of the office action, the title is objected to. The title has been amended in a manner believed to overcome the objection. Reconsideration of the objection is requested.

In paragraph 8 of the office action, the disclosure is objected to in that the current status of the parent application needs to be updated. Applicant has amended the disclosure to this end. Reconsideration of the objection is requested.

In paragraphs 10-11 of the office action, claims 57 and 89 are rejected under 35 USC 112, second paragraph as indefinite.

Applicants have amended claims 57 and 89 in a manner believed to overcome the Section 112 rejection. Reconsideration of the Section 112 rejection is requested.

In paragraphs 12 of the office action, claims 1, 32-46, 56-78 and 88-94 are rejected on the ground of obviousness-type double patenting in view of claims 1-19 and 32-36 of US Patent 6,670,068.

Applicant encloses a Terminal Disclaimer believed to overcome the obviousness-type double patenting rejection. Reconsideration of the obviousness-type double patenting rejection is requested.

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In paragraph 14 of the office action, claims 1, 32-36, 38-46, 56, 58-68, 70-78, 88, and 90-94 are rejected under 35 USC 102(b) as anticipated by US 4,242,099. The examiner cites U.S. Patent No. 4,942,099 as disclosing fluid guiding elements (ring-shaped metal members 42 and 43) being formed as a shaped metal part.

Applicant has amended claims 1 and 63 in a manner believed to distinguish over the '099 patent. For example, pending amended claims 1 and 63 recite in part that the fluid guiding element is formed as a shaped sheet metal part. According to page 2, last paragraph through page 3, first paragraph of the specification, a shaped sheet metal part is produced from an essentially flat sheet metal blank by means of one or more shaping processes, in particular, by means of embossing and/or deep drawing. In contrast, the ring-shaped metal members (42 and 43) shown in the '099 patent are not obtainable from a flat sheet metal blank by means of an embossing or deep drawing process. Rather, such ring-shaped metal members are only obtainable by way of casting, milling or erosion. A fluid guiding element comprising a shaped sheet metal part is not disclosed as a structural feature of fuel cell unit of the '099 patent.

Further, each of the ring-shaped metal members (42, 43) disclosed in the '099 patent comprises only a single fluid opening. Thus, these ring-shaped metal members (42, 43) are not provided with a fluid supply channel opening and with a fluid discharge channel opening, as required for the fluid guiding element defined in pending amended independent claims 1 and 63.

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With regard to pending claim 63, the '099 patent also does not disclose a fluid guiding element having an opening for the passage of contact elements arranged on a contact plate of an adjacent fuel cell unit to the cathode-anode-electrolyte unit of the fuel cell unit. In particular, the ring shaped metal members (42, 43) of the '099 patent do not have an opening for the passage of such contact elements which are arranged on a contact plate of an adjacent fuel cell unit.

In view of the above discussion, pending claims 1 and 63 as well as claims 32-36, 38-46, 56, 58-62, 64-68, 70-78, 88, and 90-94 clearly distinguish over the '099 patent.

Reconsideration of the Section 102(b) rejection of claims 1, 32-36, 38-46, 56, 58-68, 70-78, 88, and 90-94 is requested.

In paragraph 15 of the office action, claims 1 and 63 are rejected under 35 USC 102(a) as anticipated by WO 99/54131.

Applicant has amended claims 1 and 63 in a manner believed to distinguish over WO '131. For example, WO '131 discloses a fuel cell stack comprising separator plates (11) which are of metal or metallic (page 1, lines 9 to 13 of the reference). However, as can be seen from the cross sectional views in Fig. 4 of WO '131, these separator plates do not comprise a shaped sheet metal part obtained for example from a flat sheet metal blank by an embossing and/or deep drawing process, but rather massive, solid metal plates which are shaped by way of milling or erosion, such as those previously used contact plates discussed on page 2, first paragraph of Applicant's specification. A fluid guiding element as a shaped sheet metal part is not disclosed as a structural feature of fuel cell unit in WO'131.

Thus, the separator plates (11) according to WO '131 cannot be considered to correspond to the fluid guiding element defined in pending claims 1 and 63 formed as a shaped sheet metal part.

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Further, even if the separator plate (11) of each fuel cell unit of the fuel cell stack disclosed in WO '131 were to be incorrectly considered to be a fluid guiding element of a fuel cell unit, as defined in pending claims 1 and 63, then the respective fuel cell unit does not comprise any contact plate to which the fluid guiding element is connected in a fluid-tight and electrically conductive manner.

In particular, each fuel cell unit of the fuel cell stack disclosed in WO '131 comprises only a single separator plate (11), so that all of the separator plates (11) must be identified with either the fluid guide element or with the contact plate of the respective fuel cell unit. That is, it is not possible to identify the separator plates (11) of different fuel cell units stacked upon each other as the fluid guiding element and also the contact plate of the same fuel cell unit.

Furthermore, the separator plates (11) following each other in the stacking direction of the fuel cell stack are separated from each other by electrically insulating layers of glass-ceramic insulation (layer 30) and of glass or of glass and glass-ceramic (sealing layer 40), respectively (see page 9, lines 25 to 27 of WO '131). Thus, separator plates (11) following each other in the second direction are not connected to each other in an electrically conductive manner. An electrically conductive connection between two separator plates (11) following each other in the second direction would lead to an unwanted short-circuit in the fuel cell stack.

With regard to pending claim 63, WO '131 does not disclose the further feature of a fluid guiding element having an opening for the passage of contact elements arranged on a contact plate of an adjacent fuel cell unit to the cathode-anode-electrolyte unit of the fuel cell unit.

Thus, pending claims 1 and 63 distinguish patentably over WO '131. Reconsideration of the Section 102(a) rejection of claims 1 and 63 is requested.

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In paragraph 16 of the office action, claims 1 and 63 are rejected under 35 USC 102(a) as anticipated by WO publication 98/35398.

Applicant has amended claims 1 and 63 in a manner believed to distinguish over WO '398. For example, WO '398 discloses a fuel cell stack having a separator plate (20) which is provided with an oxygen supply channel opening (6) (see Figs. 1 and 2 of WO '398). However, different from the fluid guiding element as defined in Applicant's pending claims 1 and 63, the separator plate of the reference is not provided with any fluid discharge channel opening. Rather, as can be clearly seen from Fig. 2 of WO '398, the waste gas (H_2O) is discharged through the circular circumferential surface of the fuel cell stack, in a radial direction which is perpendicular to the stacking direction of the fuel cell stack.

Furthermore, as can be clearly seen from Figs. 3 and 4 of WO '398, the electrolyte (17) of each fuel cell unit of the fuel cell stack disclosed in WO '398 extends over the whole surface of the gas-permeable carrier (2) and, thus, the electrolyte (17) extends to the fluid port (aperture 6) in a fluid guiding area of the separator plate (20). In contrast, according to pending claim 1, the fluid guiding element is provided with a fluid port in a fluid guiding area of the fluid guiding element to which the electrolyte of the cathode-anode-electrolyte unit does not extend.

Thus, the separator plate (20) disclosed in WO '398 can not be considered to correspond with the fluid guiding element according to Applicant's pending claim 1.

Similar considerations apply to the separator plate (1) of the fuel cell units according to WO '398. For example, the separator plates (1) of the reference are only provided with an oxygen supply channel opening, but not with a fluid discharge channel opening.

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Further, the fluid opening in separator plate (1) is not provided in a area of the separator plate (1) to which the electrolyte of the cathode-anode-electrolyte unit does not extend.

With regard to Applicant's pending claim 63, none of the separator plates 20 or 1 of WO '398 has an opening for the passage of contact elements arranged on a contact plate of an adjacent fuel cell unit to the cathode-anode-electrolyte unit of the respective fuel cell unit.

Therefore, pending claims 1 and 63 distinguish patentably over WO '398.

Reconsideration of the Section 102(a) rejection of claims 1 and 63 is requested.

In paragraph 19 of the office action, claims 37 and 69 are rejected under 35 USC 103(a) as obvious in view of the '099 patent taken with the US publication 2002/0024185.

The gross deficiencies of the '099 patent are noted above. The examiner further acknowledges that the '099 patent does not disclose a mica seal. The US '185 publication does not make up for these gross deficiencies of the '099 patent and instead teaches that mica seals are unable to provide an adequate seal (column 1, lines 50-53), the reference itself rebutting the examiner's obviousness argument. Reconsideration of the Section 103(a) rejection of claims 37 and 69 is requested.

In paragraph 20 of the office action, claims 37 and 69 are rejected under 35 USC 103(a) as obvious in view of the '099 patent taken with the US Patent 6,106,967.

The gross deficiencies of the '099 patent are noted above. The examiner further acknowledges that the '099 patent does not disclose a mica seal. The '967 patent does not make up for these gross deficiencies of the '099 patent. As mentioned above, the '185 publication teaches that mica seals are unable to provide an adequate seal. Reconsideration of the Section 103(a) rejection of claims 37 and 69 is requested.

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In paragraph 21 of the office action, claims 57 and 89 are rejected under 35 USC 103(a) as obvious in view of the '099 patent taken with AAPA.

The gross deficiencies of the '099 patent are noted above. The examiner further acknowledges that the '099 patent does not disclose a solder glass seal. The AAPA does not make up for these gross deficiencies of the '099 patent such that claims 57 and 89 are not rendered obvious. Reconsideration of the Section 103(a) rejection of claims 57 and 89 is requested.

The pending claims are believed to be in allowable condition, and action to that end is requested.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Edward J. Timmer', with a long horizontal line extending from the end of the signature.

Edward J. Timmer

Reg. No. 27 402

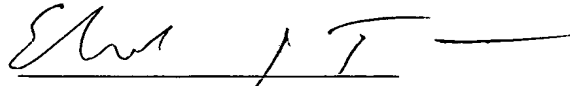
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Edward J. Timmer